

# **Appendix B**

## **Larval Density Data**

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References cited in this Appendix are included in the References at the end of the main text.

**Table B1****Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Shovelnose Sturgeon and Paddlefish**

Location	Date	Density (No./m <sup>3</sup> )	Reference
<b>Shovelnose Sturgeon</b>			
UMR Open River	April-August 1978	<0.001	Union Electric Company 1979
<b>Paddlefish</b>			
UMR Open River	April-August 1978	<0.001	Union Electric Company 1979

**Table B2****Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System for Shortnose Gar/Lepisostidae and Bowfin**

Location	Date	Density (No./m <sup>3</sup> )	Reference
<b>Shortnose Gar</b>			
UMR Pool 14	May 1978	0.001	Holland et al. 1984, Hazleton 1978
UMR Pool 14	May 1978	0.02	Hazleton 1979
UMR Pool 14	July 1984	0.024	LMSE 1985
UMR Pool 26	May 1996	0.0086	Gutreuter, Dettmers, and Wahl 1998
	June 1996	0.0038	
	July 1997	0.0018	
IWW LaGrange Pool	May 1996	0.0025	Gutreuter, Dettmers, and Wahl 1998
<b>Bowfin</b>			
UMR Pool 26	June 1996	0.0014	Gutreuter, Dettmers, and Wahl 1998

**Table B3**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Gizzard Shad**

Location	Date	Density (No./m <sup>3</sup> )	Reference
UMR Pool 2	April 1976	0.0798	HDR 1977a
	May 1976	1.239	
	June 1976	1.218	
	July 1976	1.23	
	August 1976	0.0094	
UMR Pool 3	April-Sept. 1975	0.04	Dahlberg et al. 1976
UMR Pool 3	June 1978	0.47	Holland et al. 1984, HDR 1979
UMR Pool 5	June 1975	0.05	Holland et al. 1984, Wapora, Inc. 1976a
UMR Pool 5	1981	0.029	Kowalski et al. 1984
	1982	0.118	
UMR Pool 7	May 1981	0.004	Holland et al. 1984, Holland & Sylvester 1983
	June 1981	0.04	
	July 1981	0.04	
UMR Pool 8	May 1982	0.22	Holland et al. 1984, Holland et al. 1983
	June 1982	0.52	
	July 1982	0.08	
UMR Pool 8	June-Aug. 1989	0.313	Holland-Bartels et al. 1990a
UMR Pool 8	June 1989	0.477	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
	July 1989	0.724	
	August 1989	0.002	
UMR Pool 13	June-Aug. 1989	0.084	Holland-Bartels et al. 1990a
UMR Pool 13	June 1989	0.098	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
	July 1989	0.251	
UMR Pool 13	April-Aug. 1983	0.164	Sheaffer & Nickum 1986
UMR Pool 14	May 1975	0.03	Holland et al. 1984, Nalco 1976
	June 1975	0.076	
	July 1975	0.002	
	August 1975	0.201	
UMR Pool 14	May 1976	0.01	Holland et al. 1984, Nalco 1977
	June 1976	0.57	
	July 1976	0.108	
UMR Pool 14	April 1977	0.001	Holland et al. 1984, Hazleton 1978

**Table B3**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Gizzard Shad (cont.)**

Location	Date	Density (No./m <sup>3</sup> )	Reference
	May 1977	0.028	
	June 1977	0.06	
	July 1977	0.005	
UMR Pool 14	May 1978	0.016	Holland et al. 1984, Hazleton 1978
	June 1978	0.104	
	July 1978	0.021	
UMR Pool 14	May 1981	0.152	Holland et al. 1984, ERT 1982
	June 1981	2.022	
	July 1981	0.011	
UMR Pool 14	May 1978	0.1	Hazleton 1979
	June 1978	0.79	
	July 1978	0.15	
UMR Pool 14	May 1979	0.05	Commonwealth Edison 1980
	June 1979	0.54	
	July 1979	0.1	
UMR Pool 14	May 1980	0.006	ERT 1981
	June 1980	0.154	
	July 1980	0.030	
UMR Pool 14	May 1982	0.012	ERT 1984
	June 1982	0.061	
	July 1982	0.029	
UMR Pool 14	May 1984	0.051	LMSE 1985
	June 1984	1.070	
	July 1984	0.131	
UMR Pool 14	May 1985	0.19	LMSE 1986
	June 1985	0.2	
	July 1985	0.04	
UMR Pool 26	June-Aug., 1989	1.922	Holland-Bartels et al. 1990a
UMR Pool 26	June 1989	3.93	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
	July 1989	1.258	
	August 1989	0.275	
UMR Pool 26	May 1997	0.0030	Gutreuter et al. 1998b
	May 1996	0.5782	
	June 1997	0.2067	

**Table B3**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Gizzard Shad (cont.)**

Location	Date	Density (No./m <sup>3</sup> )	Reference
	June 1996	1.234	
	July 1996	0.0989	
	July 1997	0.0201	
IWW LaGrange Pool	June-Aug., 1989	6.535	Holland-Bartels et al. 1990a
IWW LaGrange Pool	June 1989	17.489	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
	July 1989	0.383	
IWW LaGrange Pool	May 1996	0.2695	Gutreuter et al. 1998b
	May 1997	0.8759	
	June 1996	2.856	
	June 1997	0.0867	
	July 1996	0.0835	
	July 1997	0.04678	
IWW LaGrange Pool	June 1978	<0.01	Wapora, Inc. 1981
	June 1979	0.55	
	July 1979	0.05	
	June 1980	0.10	
	July 1980	0.17	
<i>Dorosoma</i> spp. or <i>Alosa</i> spp.			
IWW LaGrange Pool	June 1978	9.0	Wapora, Inc. 1981
	July 1978	1.87	
	August 1978	<0.01	
	April 1979	<0.01	
	May 1979	14.89	
	June 1979	9.51	
	July 1979	0.38	
	August 1979	<0.01	
	April 1980	0.02	

**Table B3****Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Gizzard Shad (cont.)**

Location	Date	Density (No./m <sup>3</sup> )	Reference
	May 1980	3.23	
	June 1980	37.64	
	July 1980	0.51	
	August 1980	0.01	

**Table B4**

**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Mooneye/*Hiodon* spp.**

Location	Date	Density (No./m <sup>3</sup> )	Reference
UMR Pool 1	May 1980	0.001	Holland et al. 1984, Heberling et al. 1981
	June 1980	0.001	
UMR Pool 3	April-Sept. 1975	0.0032	Dahlberg et al. 1976
UMR Pool 5	1981	0.0005	Kowalski et al. 1984
	1982	0.009	
UMR Pool 7	June 1981	0.004	Holland et al. 1984, Holland & Sylvester 1983
UMR Pool 8	June-Aug. 1989	0.001	Holland-Bartels et al. 1990a
UMR Pool 8	June 1989	0.002	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
UMR Pool 13	June-Aug. 1989	0.001	Holland-Bartels et al. 1990a
UMR Pool 13	June 1989	0.001	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
UMR Pool 13	April-Aug. 1983	0.007	Sheaffer & Nickum 1986
UMR Pool 14	May 1975	0.031	Holland et al. 1984, Nalco 1976
	June 1975	0.014	
	September 1975	0.001	
UMR Pool 14	April 1976	0.009	Holland et al. 1984, Nalco 1977
	May 1976	0.087	
	June 1976	0.02	
UMR Pool 14	April 1977	0.004	Holland et al. 1984, Hazleton 1978
	May 1977	0.011	
	June 1977	0.001	
UMR Pool 14	May 1978	0.082	Holland et al. 1984, Hazleton 1978
	June 1978	0.008	
UMR Pool 14	May 1981	0.02	Holland et al. 1984, ERT 1982
	June 1981	0.01	
UMR Pool 14	May 1978	0.26	Hazleton 1979
	June 1978	0.06	
	July 1978	0.03	
UMR Pool 14	May 1979	0.12	Commonwealth Edison 1980
	June 1979	0.1	
UMR Pool 14	May 1980	0.041	ERT 1981
UMR Pool 14	May 1983	0.149	
UMR Pool 14	May 1984	0.282	LMSE 1985
	June 1984	0.101	

**Table B4**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
 for Mooneye/*Hiodon* spp. (cont.)**

Location	Date	Density (No./m <sup>3</sup> )	Reference
	July 1984	0.055	
UMR Pool 14	April 1985	0.08	LMSE 1986
	May 1985	0.03	
UMR Pool 26	April 1997	0.0019	Gutreuter et al. 1998b
	May 1997	0.0428	
	May 1996	0.0043	
	June 1997	0.0037	
	June 1996	0.0041	
	July 1997	0.0010	
IWW LaGrange Pool	June 1978	<0.01	Wapora, Inc. 1981
	May 1979	<0.01	
	June 1979	<0.01	
	June 1980	<0.01	

**Table B5****Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System for Northern Pike**

<b>Location</b>	<b>Date</b>	<b>Density (No./m<sup>3</sup>)</b>	<b>Reference</b>
Upper St. Anthony/ Lower St. Anthony (up from UMR Pool 1)	May 1975	0.0204	Minnesota Power and Light 1977
UMR Pool 5	June 1975	0.05	Holland et al. 1984, Wapora, Inc. 1976a
UMR Pool 14	May 1975	0.001	Holland et al. 1984, Nalco 1976
UMR Pool 14	April 1976	0.001	Holland et al. 1984, Nalco 1977
UMR Pool 14	May 1984	0.026	LMSE 1985

**Table B6**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Common Carp**

Location	Date	Density (No./m <sup>3</sup> )	Reference
UMR Pool 1	May 1980	0.01	Holland et al. 1984, Heberling et al. 1981
	June 1980	0.005	
	July 1980	0.003	
UMR Pool 2	May 1976	0.0294	HDR 1977a
	June 1976	0.0752	
	July 1976	0.2758	
	August 1976	0.0038	
	September 1976	0.0004	
UMR Pool 3	April-Sept. 1975	0.0136	Dalhberg et al. 1976
UMR Pool 3	June 1978	0.15	Holland et al. 1984, HDR 1979
UMR Pool 5	1982	0.002	Kowalski et al. 1984
UMR Pool 5	June 1976	0.01	Holland et al. 1984, Wapora, Inc. 1976a
UMR Pool 7	May 1981	0.004	Holland et al. 1984, Holland & Sylvester 1983
	June 1981	0.052	
	July 1981	0.04	
UMR Pool 8	May 1982	0.02	Holland et al. 1984, Holland et al. 1983
	June 1982	0.04	
	July 1982	0.18	
UMR Pool 8	June-Aug. 1989	0.026	Holland-Bartels et al. 1990a
UMR Pool 8	June 1989	0.07	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
	July 1989	0.009	
UMR Pool 13	June-Aug. 1989	0.046	Holland-Bartels et al. 1990a
UMR Pool 13	June 1989	0.197	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
	July 1989	0.002	
UMR Pool 13	April-Aug. 1983	0.031	Sheaffer & Nickum 1986
UMR Pool 14	May 1975	1.08	Holland et al. 1984, Nalco 1976
	June 1975	0.104	
	July 1975	0.251	
	August 1975	0.036	
	September 1975	0.001	
UMR Pool 14	April 1976	0.014	Holland et al. 1984, Nalco 1977
	May 1976	0.003	
	June 1976	0.504	
	July 1976	0.219	
	August 1976	0.001	

**Table B6**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Common Carp (cont.)**

Location	Date	Density (No./m <sup>3</sup> )	Reference
UMR Pool 14	April 1977	0.082	Holland et al. 1984, Hazleton 1978
	May 1977	0.033	
	June 1977	0.894	
	July 1977	0.212	
	August 1977	0.003	
UMR Pool 14	May 1978	1.425	Holland et al. 1984, Hazleton 1978
	June 1978	1.098	
	July 1978	0.162	
UMR Pool 14	May 1981	0.021	Holland et al. 1984, ERT 1982
	June 1981	1.664	
	July 1981	0.122	
UMR Pool 14	May 1978	4.86	Hazleton 1979
	June 1978	6.07	
	July 1978	0.61	
UMR Pool 14	May 1979	0.97	Commonwealth Edison 1980
	June 1979	1.56	
	July 1979	1.02	
UMR Pool 14	May 1980	0.047	ERT 1981
	June 1980	0.986	
	July 1980	1.073	
UMR Pool 14	May 1983	0.032	ERT 1984
	June 1983	1.251	
	July 1983	0.369	
UMR Pool 14	May 1984	1.300	LMSE 1985
	June 1984	3.617	
	July 1984	0.610	
UMR Pool 14	April 1985	0.02	LMSE 1986
	May 1985	0.44	
	June 1985	0.09	
	July 1985	0.05	
UMR Pool 26	June-Aug. 1989	0.031	Holland-Bartels et al. 1990a
UMR Pool 26	June 1989	0.121	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995

**Table B6**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Common Carp (cont.)**

Location	Date	Density (No./m <sup>3</sup> )	Reference
UMR Pool 26	April 1997	0.00048	Gutreuter et al. 1998b
	May 1996	5.168	
	May 1997	0.0028	
	June 1996	0.5509	
	June 1997	0.0089	
	July 1996	0.0074	
	July 1997	0.0011	
IWW LaGrange Pool	June-Aug. 1989	0.121	Holland-Bartels et al. 1990a
IWW LaGrange Pool	June 1989	0.363	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
IWW LaGrange Pool	May 1996	2.250	Gutreuter et al. 1998b
	May 1997	0.0023	
	June 1996	1.097	
	June 1997	0.3218	
	July 1996	0.0061	
IWW LaGrange Pool	June 1978	0.10	Wapora, Inc. 1981
	July 1978	<0.10	
	August 1978	<0.10	
	May 1979	0.31	
	June 1979	0.08	
	July 1979	<0.01	
	April 1980	<0.01	
	May 1980	0.04	
	June 1980	3.60	
	July 1980	0.01	
	August 1980	<0.01	

**Table B7**

**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Emerald Shiner/Cyprinidae (Excluding Common Carp)**

<b>Location</b>	<b>Species</b>	<b>Date</b>	<b>Density (No./m<sup>3</sup>)</b>	<b>Reference</b>
UMR Pool 2	Emerald shiner	May 1976	0.0016	HDR 1977a
		June 1976	0.0153	
		July 1976	0.0855	
		August 1976	0.034	
		September 1976	0.0065	
UMR Pool 2	Cyprinidae	May 1976	0.0307	HDR 1977a
		June 1976	0.065	
		July 1976	0.001	
UMR Pool 3	Cyprinidae	April-Sept. 1975	0.0051	Dahlberg et al. 1976
UMR Pool 3	Emerald shiner	April-Sept. 1975	0.0436	Dahlberg et al. 1976
UMR Pool 5	Emerald shiner	1981	0.089	Kowalski et al. 1984
		1982	0.005	
UMR Pool 5	Cyprinidae	1981	0.013	Kowalski et al. 1984
		1982	0.004	
UMR Pool 5	Emerald shiner	June 1975	0.04	Holland et al. 1984, Wapora, Inc. 1976a
		July 1975	0.03	
UMR Pool 5	Cyprinidae	May 1975	0.11	Holland et al. 1984, Wapora, Inc. 1976a
		June 1975	0.32	
UMR Pool 7	Cyprinidae	May 1981	0.004	Holland et al. 1984, Holland & Sylvester 1983
		June 1981	0.144	
		July 1981	0.008	
		August 1981	0.004	
UMR Pool 8	Cyprinidae	July-Aug. 1989	0.693	Holland-Bartels et al. 1990a
UMR Pool 8	Cyprinidae	June 1989	0.137	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
		July 1989	2.148	
		August 1989	1.115	
UMR Pool 8	Emerald shiner	June 1982	0.04	Holland et al. 1984, Holland et al. 1983
UMR Pool 8	Cyprinidae	July 1982	0.18	Holland et al. 1984, Holland et al. 1983
UMR Pool 9	Cyprinidae	June 1980	6.706	Holland et al. 1984
UMR Pool 13	Emerald shiner	April-Aug. 1983	0.28	Sheaffer & Nickum 1986
UMR Pool 13	Cyprinidae	April-Aug. 1983	0.035	Sheaffer & Nickum 1986
UMR Pool 13	Cyprinidae	June-Aug. 1989	0.735	Holland-Bartels et al. 1990a
UMR Pool 13	Cyprinidae	June 1989	3.022	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
		July 1989	0.267	
		August 1989	0.24	
UMR Pool 14	Emerald shiner	August 1977	0.013	Holland et al. 1984, Hazleton 1978

**Table B7**
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Emerald Shiner/Cyprinidae (Excluding Common Carp) (cont.)**

<b>Location</b>	<b>Species</b>	<b>Date</b>	<b>Density (No./m<sup>3</sup>)</b>	<b>Reference</b>
UMR Pool 14	Emerald shiner	June 1981	0.31	Holland et al. 1984, ERT 1982
		July 1981	0.04	
UMR Pool 14	Cyprinidae	May 1975	0.017	Holland et al. 1984, Nalco 1976
		June 1975	0.296	
		July 1975	0.045	
UMR Pool 14	Cyprinidae	May 1976	0.006	Holland et al. 1984, Nalco 1977
		June 1976	0.236	
		July 1976	0.011	
		August 1976	0.017	
		September 1976	0.011	
UMR Pool 14	Cyprinidae	April 1977	0.143	Holland et al. 1984, Hazleton 1978
		May 1977	0.011	
		June 1977	0.013	
		July 1977	1.609	
		August 1977	0.152	
UMR Pool 14	Cyprinidae	May 1978	0.186	Holland et al. 1984, Hazleton 1978
		June 1978	3.751	
		July 1978	0.532	
UMR Pool 14	Cyprinidae	May 1981	0.006	Holland et al. 1984, ERT 1982
		June 1981	0.124	
		July 1981	0.048	
UMR Pool 14	Cyprinidae	May 1978	1.21	Hazleton 1979
	Cyprinidae	June 1978	27.3	
	Cyprinidae	July 1978	6.21	
UMR Pool 14	Cyprinidae	May 1979	0.03	Commonwealth Edison 1980
		June 1979	7.35	
		July 1979	1.39	
UMR Pool 14	Cyprinidae	May 1980	0.011	ERT 1981
		July 1980	0.006	
UMR Pool 14	Emerald shiner	June 1983	1.246	ERT 1984
		July 1983	0.027	
UMR Pool 14	Cyprinidae	May 1983	0.013	ERT 1984
		June 1983	0.293	
		July 1983	0.101	
UMR Pool 14	Emerald shiner	June 1984	10.124	LMSE 1985
		July 1984	0.92	
UMR Pool 14	Cyprinidae	May 1984	0.047	LMSE 1985

**Table B7**
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Emerald Shiner/Cyprinidae (Excluding Common Carp)(cont.)**

<b>Location</b>	<b>Species</b>	<b>Date</b>	<b>Density (No./m<sup>3</sup>)</b>	<b>Reference</b>
UMR Pool 14	Cyprinidae	June 1984	0.546	
		July 1984	0.378	
		April 1985	0.01	LMSE 1986
		May 1985	0.08	
		June 1985	0.12	
		July 1985	0.24	
UMR Pool 14	Emerald shiner	May 1985	1.322	LMSE 1986
		June 1985	5.725	
		July 1985	0.173	
UMR Pool 26	Cyprinidae	June-Aug. 1989	0.265	Holland-Bartels et al. 1990a
UMR Pool 26	Cyprinidae	June 1989	0.183	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
		July 1989	0.68	
		August 1989	0.057	
		May 1997	0.0045	Gutreuter et al. 1998b
UMR Pool 26	Cyprinidae	June 1997	0.0204	
		July 1997	0.0989	
		June-Aug. 1989	0.04	Holland-Bartels et al. 1990a
IWW LaGrange Pool	Cyprinidae	June 1989	0.103	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
IWW LaGrange Pool	Cyprinidae	June 1997	0.0022	Gutreuter et al. 1998b
		July 1997	0.0092	
		June 1978	29.65	Wapora, Inc. 1981
IWW LaGrange Pool	Cyprinidae	July 1978	0.16	
		August 1978	<0.01	
		April 1979	<0.01	
		May 1979	1.85	
		June 1979	6.35	
		July 1979	0.37	
		August 1979	0.03	
		May 1980	1.01	
		June 1980	1.55	
		July 1980	0.11	

**Table B7****Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System for Emerald Shiner/Cyprinidae (Excluding Common Carp)(cont.)**

Location	Species	Date	Density (No./m <sup>3</sup> )	Reference
		August 1980	<0.01	
IWW LaGrange Pool	Emerald Shiner	June 1978	2.14	Wapora, Inc. 1981
		April 1979	<0.01	
		May 1979	<0.01	
		June 1979	0.12	
		July 1979	0.13	
		August 1979	<0.01	
		May 1980	<0.01	
		June 1980	0.30	
		July 1980	0.40	
		August 1980	<0.01	

**Table B8**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Suckers/Catostomidae**

Location	Date	Density (No./m <sup>3</sup> )	Reference
UMR Pool 1	May 1980	0.013	Holland et al. 1984, Heberling et al. 1981
	June 1980	0.053	
	July 1980	0.001	
UMR Pool 2	April 1976	0.0003	HDR 1977a
	May 1976	0.0057	
	June 1976	0.0003	
	July 1976	0.0002	
UMR Pool 3	June 1978	0.08	Holland et al. 1984, HDR 1979
UMR Pool 3	April-Sept. 1975	0.0245	Dahlberg et al. 1976
UMR Pool 5	1981	0.003	Kowalski et al. 1984
	1982	0.013	
UMR Pool 7	May 1981	0.024	Holland et al. 1984, Holland & Sylvester 1983
UMR Pool 8	June-Aug. 1989	0.002	Holland-Bartels et al. 1990a
UMR Pool 8	June 1989	0.009	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
UMR Pool 8	June 1982	0.02	Holland et al. 1984, Holland et al. 1983
	July 1982	0.02	
UMR Pool 13	June-Aug. 1989	0.001	Holland-Bartels et al. 1990a
UMR Pool 13	June 1989	0.002	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
	July 1989	0.004	
	May 1975	0.038	Holland et al. 1984, Nalco 1976
UMR Pool 14	June 1975	0.07	
	July 1975	0.007	
	May 1976	0.005	Holland et al. 1984, Nalco 1976
UMR Pool 14	June 1976	0.018	
	April 1977	0.698	Holland et al. 1984, Hazleton 1978
	May 1977	0.022	
UMR Pool 14	June 1977	0.004	
	July 1977	0.003	
	May 1978	3.408	Holland et al. 1984, Hazleton 1978
UMR Pool 14	June 1978	0.184	
	July 1978	0.16	
	May 1978	5.79	Hazleton 1979
	June 1978	0.71	
	July 1978	0.66	

**Table B8**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
 for Suckers/Catostomidae (cont.)**

Location	Date	Density (No./m <sup>3</sup> )	Reference
UMR Pool 14	May 1979	1.24	Commonwealth Edison 1980
	June 1979	0.18	
	June 1979	0.18	
	July 1979	0.08	
UMR Pool 14	July 1983	0.012	ERT 1984
UMR Pool 14	May 1984	0.155	LMSE 1985
	June 1984	0.516	
	July 1984	0.076	
UMR Pool 26	June-Aug. 1989	0.001	Holland-Bartels et al. 1990a
UMR Pool 26	June 1989	0.004	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
UMR Pool 26	April 1997	0.0024	Gutreuter et al. 1998b
	May 1997	0.0457	
	May 1996	0.1853	
	June 1997	0.2104	
	June 1996	0.1354	
	July 1997	0.0116	
	July 1996	0.0156	
IWW LaGrange Pool	May 1996	0.0744	Gutreuter et al. 1998b
	June 1997	0.9587	
	June 1996	0.0027	
	July 1997	0.0976	
	July 1996	0.0601	
IWW LaGrange Pool	June 1978	<0.01	Wapora, Inc. 1981
	July 1978	<0.01	
	May 1979	<0.01	
	July 1979	<0.01	
	May 1980	<0.01	
	July 1980	<0.01	

**Table B9**

**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for River Carpsucker/*Carpioedes* spp.**

Location	Date	Density (No./m <sup>3</sup> )	Reference
UMR Pool 2	May 1976	0.0018	HDR 1977a
	June 1976	0.0048	
	July 1976	0.0014	
UMR Pool 3	April-Sept. 1975	0.0044	Dahlberg et al. 1976
UMR Pool 8	May 1982	0.04	Holland et al. 1984, Holland et al. 1983
UMR Pool 8	June-Aug. 1989	0.005	Holland-Bartels et al. 1990a
UMR Pool 8	June 1989	0.006	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
	July 1989	0.011	
	August 1989	0.001	
UMR Pool 13	June-Aug. 1989	0.003	Holland-Bartels et al. 1990a
UMR Pool 13	June 1989	0.012	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
	July 1989	0.001	
	August 1989	0.001	
UMR Pool 13	April-Aug. 1983	0.012	Sheaffer & Nickum 1986
UMR Pool 14	June 1981	0.02	Holland et al. 1984, ERT 1982
	July 1981	0.094	
UMR Pool 14	May 1980	0.259	ERT 1981
	June 1980	0.084	
	July 1980	0.043	
UMR Pool 14	May 1983	0.026	ERT 1984
	June 1983	0.045	
	July 1983	0.027	
UMR Pool 14	May 1984	0.101	LMSE 1985
	June 1984	0.158	
	July 1984	0.088	
UMR Pool 14	April 1985	0.02	LMSE 1985
	May 1985	0.07	
	June 1985	0.02	
	July 1985	0.03	
UMR Pool 26	June-Aug. 1989	0.001	Holland-Bartels et al. 1990a
UMR Pool 26	June 1989	0.003	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
IWW LaGrange Pool	June-Aug. 1989	0.007	Holland-Bartels et al. 1990a

**Table B9****Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System for River Carpsucker/*Carpio*des spp. (cont.)**

IWW LaGrange Pool	June 1989	0.018	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
IWW LaGrange Pool	June 1978	0.02	Wapora, Inc. 1981
	July 1978	0.02	
	April 1979	<0.01	
	May 1979	0.08	
	June 1979	<0.01	
	July 1979	<0.01	
	August 1979	<0.01	
	April 1980	<0.01	
	May 1980	0.03	
	June 1980	0.10	
	July 1980	<0.01	

**Table B10**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Buffalo/*Ictiobus* spp.**

Location	Date	Density (No./m <sup>3</sup> )	Reference
UMR Pool 3	April-Sept. 1975	0.0062	Dahlberg et al. 1976
UMR Pool 7	June 1981	0.004	Holland et al. 1984, Holland & Sylvester 1983
	July 1981	0.004	
UMR Pool 8	May 1982	0.1	Holland et al. 1984, Holland et al. 1983
UMR Pool 8	June-Aug. 1989	0.001	Holland-Bartels et al. 1990a
UMR Pool 8	June 1989	0.002	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
	July 1989	0.003	
UMR Pool 13	April-Aug. 1983	0.006	Sheaffer & Nickum 1986
UMR Pool 13	June-Aug. 1989	0.003	Holland-Bartels et al. 1990a
UMR Pool 13	June 1989	0.007	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
	July 1989	0.001	
UMR Pool 14	May 1975	0.176	Holland et al. 1984, Nalco 1976
	June 1975	0.004	
UMR Pool 14	April 1976	0.119	Holland et al. 1984, Nalco 1977
	May 1976	0.36	
	June 1976	0.001	
UMR Pool 14	May 1981	0.067	Holland et al. 1984, ERT 1982
UMR Pool 14	May 1981	0.011	ERT 1982
UMR Pool 14	May 1983	0.344	ERT 1984
	June 1983	0.103	
UMR Pool 14	May 1984	0.664	LMSE 1985
	June 1984	0.352	
	July 1984	0.103	
UMR Pool 14	April 1985	0.73	LMSE 1986
	May 1985	0.06	
	June 1985	0.01	
UMR Pool 26	May 1996	0.1917	Gutreuter et al. 1998b
	June 1996	0.0314	
IWW LaGrange Pool	June-Aug. 1989	0.004	Holland-Bartels et al. 1990a
IWW LaGrange Pool	June 1989	0.011	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
IWW LaGrange Pool	June 1996	0.0238	Gutreuter et al. 1998b

**Table B10**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
 for Buffalo/*Ictiobus* spp. (cont.)**

<b>Location</b>	<b>Date</b>	<b>Density (No./m<sup>3</sup>)</b>	<b>Reference</b>
IWW LaGrange Pool	June 1978	0.02	Wapora, Inc. 1981
	July 1978	0.02	
	April 1979	<0.01	
	May 1979	0.08	
	June 1979	<0.01	
	July 1979	<0.01	
	August 1979	<0.01	
	April 1980	<0.01	
	May 1980	0.03	
	June 1980	0.10	
	July 1980	<0.01	

**Table B11**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
 for Redhorse/*Moxostoma* spp.**

Location	Date	Density (No./m <sup>3</sup> )	Reference
UMR Pool 7	July 1981	0.004	Holland et al. 1984, Holland & Sylvester 1983
UMR Pool 8	June-Aug. 1989	0.006	Holland-Bartels et al. 1990a
UMR Pool 8	June 1989	0.028	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
UMR Pool 13	July 1989	0.001	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
IWW LaGrange Pool	June 1978	<0.01	Wapora, Inc. 1981

**Table B12**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Spotted Sucker**

Location	Date	Density (No./m <sup>3</sup> )	Reference
UMR Pool 13	April-Aug. 1983	0.002	Sheaffer & Nickum 1986

**Table B13**
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Channel Catfish/Flathead Catfish/Ictaluridae**

Location	Date	Density (No./m <sup>3</sup> )	Reference
<b>Channel Catfish</b>			
UMR Pool 1	June 1980	0.008	Holland et al. 1984, Heberling et al. 1981
	July 1980	0.033	
UMR Pool 2	May 1976	0.0004	HDR 1977a
	June 1976	0.0108	
	July 1976	0.0136	
	August 1976	0.0063	
	September 1976	0.0002	
UMR Pool 3	April-Sept. 1975	0.0009	Dahlberg et al. 1976
UMR Pool 5	1981	0.0002	Kowalski et al. 1984
UMR Pool 14	June 1975	0.002	Holland et al. 1984, Nalco 1976
	July 1975	0.007	
UMR Pool 14	July 1976	0.001	Holland et al. 1984, Nalco 1977
UMR Pool 14	June 1977	0.002	Holland et al. 1984, Hazleton 1978
	July 1977	0.003	
UMR Pool 14	June 1978	0.002	Holland et al. 1984, Hazleton 1978
	July 1978	0.018	
UMR Pool 14	1978	0.03	Hazleton 1979
UMR Pool 14	July 1978	0.12	Hazleton 1979
UMR Pool 14	June 1981	0.038	Holland et al. 1984, ERT 1982
UMR Pool 14	July 1983	0.006	ERT 1984
UMR Pool 14	July 1984	0.060	LMSE 1985
IWW LaGrange Pool	July 1996	0.00281	Gutreuter et al. 1998b
IWW LaGrange Pool	August 1978	<0.01	Wapora, Inc. 1981
	May 1979	<0.01	
	July 1979	<0.01	
	August 1979	<0.01	
	July 1980	<0.01	
<b>Flathead Catfish</b>			
IWW LaGrange Pool	July 1979	<0.01	Wapora, Inc. 1981

**Table B13****Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Channel Catfish/Flathead Catfish/Ictaluridae (cont.)**

Location	Date	Density (No./m <sup>3</sup> )	Reference
<b>Catfish/Ictaluridae</b>			
Pool 14	June 1978	0.02	Hazleton 1979
Pool 14	June 1979	0.06	Commonwealth Edison 1980
	July 1979	0.02	
Pool 14	July 1984	0.022	LMSE 1985
IWW LaGrange Pool	June 1978	<0.01	Wapora, Inc. 1981
	July 1979	<0.01	

**Table B14**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for White Bass**

Location	Date	Density (No./m <sup>3</sup> )	Reference
UMR Pool 2	April 1976	0.0013	HDR 1977a
	May 1976	0.0242	
	June 1976	0.0177	
	July 1976	0.0003	
UMR Pool 3	May-Sept. 1975	0.0226	Dahlberg et al. 1976
UMR Pool 3	June 1978	0.05	Holland et al. 1984, HDR 1979
UMR Pool 5	1981	0.003	Kowalski et al. 1984
	1982	0.044	
UMR Pool 5	May 1975	0.23	Holland et al. 1984, Wapora, Inc. 1976a
	June 1975	0.31	
UMR Pool 7	May 1981	0.008	Holland et al. 1984, Holland & Sylvester 1983
	June 1981	0.004	
	July 1981	0.004	
UMR Pool 8	June-Aug. 1989	0.023	Holland-Bartels et al. 1990a
UMR Pool 8	June 1989	0.117	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
UMR Pool 8	May 1982	0.44	Holland et al. 1984, Holland et al. 1983
	June 1982	0.32	
	July 1982	0.16	
UMR Pool 13	April-Aug. 1983	0.003	Sheaffer & Nickum 1986
UMR Pool 13	June 1989	0.002	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
UMR Pool 13	June-Aug. 1989	0.001	Holland-Bartels et al. 1990a
UMR Pool 14	May 1975	0.154	Holland et al. 1984, Nalco 1976
	June 1975	0.401	
	July 1975	0.005	
UMR Pool 14	May 1976	0.008	Holland et al. 1984, Nalco 1976
	June 1976	0.017	
UMR Pool 14	May 1977	0.007	Holland et al. 1984, Hazleton 1978
UMR Pool 14	May 1978	0.01	Holland et al. 1984, Hazleton 1978
	June 1978	0.022	
	July 1978	0.001	
UMR Pool 14	May 1981	0.006	Holland et al. 1984, ERT 1982
	June 1981	0.08	
UMR Pool 14	May 1978	0.05	Hazleton 1979
	June 1978	0.18	

**Table B14**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for White Bass (cont.)**

Location	Date	Density (No./m <sup>3</sup> )	Reference
	July 1978	0.02	
UMR Pool 14	May 1979	0.1	Commonwealth Edison 1980
	June 1979	0.32	
	July 1979	0.08	
UMR Pool 14	May 1980	0.025	ERT 1981
UMR Pool 14	May 1983	0.017	ERT 1984
	June 1983	0.011	
UMR Pool 14	May 1984	0.263	LMSE 1985
	June 1984	0.380	
	July 1984	0.024	
UMR Pool 14	April 1985	0.02	LMSE 1986
	May 1985	0.04	
	June 1985	0.01	
UMR Pool 26	June 1989	0.031	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
UMR Pool 26	June-Aug. 1989	0.006	Holland-Bartels et al. 1990a
UMR Pool 26	May 1996	0.0091	Gutreuter et al. 1998b
	May 1997	0.0013	
	June 1996	0.0125	
	June 1997	0.0047	
	July 1996	0.0017	
IWW LaGrange Pool	June-Aug. 1989	0.002	Holland-Bartels et al. 1990a
IWW LaGrange Pool	June 1989	0.006	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
IWW LaGrange Pool	May 1996	0.0152	Gutreuter et al. 1998b
	May 1997	0.1329	
	June 1996	0.0148	
	June 1997	0.0075	
	July 1996	0.0088	
IWW LaGrange Pool	June 1978	<0.01	Wapora, Inc. 1981
	July 1978	<0.01	
	August 1978	<0.01	
	May 1979	0.13	
	June 1979	0.03	

**Table B14****Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System for White Bass (cont.)**

Location	Date	Density (No./m <sup>3</sup> )	Reference
	July 1979	<0.01	
	August 1979	<0.01	
	April 1980	<0.01	
	May 1980	0.04	
	June 1980	0.13	
	July 1980	<0.01	
	August 1980	<0.01	

**Table B15**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Bluegill/*Lepomis* spp.**

Location	Date	Density (No./m <sup>3</sup> )	Reference
UMR Pool 1	June 1980	0.001	Holland et al. 1984, Heberling et al. 1981
	July 1980	0.002	
UMR Pool 2	June 1976	0.0034	HDR 1977a
	July 1976	0.0048	
	August 1976	0.0008	
UMR Pool 3	April-Sept. 1975	0.0026	Dahlberg et al. 1976
UMR Pool 5	1981	0.0002	Kowalski et al. 1984
	1982	0.002	
UMR Pool 5	June 1975	0.08	Holland et al. 1984, Wapora, Inc. 1976a
UMR Pool 7	June 1981	0.028	Holland et al. 1984, Holland & Sylvester 1983
	July 1981	0.008	
UMR Pool 8	June-Aug. 1989	0.069	Holland-Bartels et al. 1990a
UMR Pool 8	June 1989	0.014	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
	July 1989	0.316	
	August 1989	0.006	
	June 1982	0.1	Holland et al. 1984, Holland et al. 1983
	July 1982	0.26	
UMR Pool 13	June-Aug. 1989	0.276	Holland-Bartels et al. 1990a
UMR Pool 13	June 1989	0.145	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
	July 1989	0.753	
	August 1989	0.38	
	April-Aug. 1983	0.036	Sheaffer & Nickum 1986
UMR Pool 14	June 1975	0.021	Holland et al. 1984, Nalco 1976
	July 1975	0.014	
	June 1976	0.027	Holland et al. 1984, Nalco 1977
UMR Pool 14	July 1976	0.035	
	August 1976	0.005	
	May 1977	0.003	Holland et al. 1984, Hazleton 1978
UMR Pool 14	June 1977	0.132	
	July 1977	0.096	
	August 1977	0.011	
	September 1977	0.001	
UMR Pool 14	June 1978	0.053	Holland et al. 1984, Hazleton 1978
	July 1978	0.014	

**Table B15**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
 for Bluegill/*Lepomis* spp. (cont.)**

Location	Date	Density (No./m <sup>3</sup> )	Reference
UMR Pool 14	June 1981	0.02	Holland et al. 1984, ERT 1982
UMR Pool 14	June 1978	0.25	Hazleton 1979
UMR Pool 14	July 1978	0.07	
UMR Pool 14	June 1979	0.21	Commonwealth Edison 1980
	July 1979	0.22	
UMR Pool 14	June 1980	0.037	ERT 1981
	July 1980	0.006	
UMR Pool 14	June 1983	0.013	ERT 1984
	July 1983	0.016	
UMR Pool 14	June 1984	1.840	LMSE 1985
	July 1984	0.560	
UMR Pool 14	May 1985	0.04	LMSE 1986
	June 1985	0.06	
	July 1985	0.04	
UMR Pool 26	June-Aug. 1989	0.627	Holland-Bartels et al. 1990a
UMR Pool 26	June 1989	0.061	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
	July 1989	1.759	
	August 1989	1.527	
UMR Pool 26	May 1996	0.0213	Gutreuter et al. 1998b
	May 1997	0.0026	
	June 1996	0.0545	
	Jule 1996	0.0017	
	July 1997	0.0011	
IWW LaGrange Pool	June-Aug. 1989	0.006	Holland-Bartels et al. 1990a
IWW LaGrange Pool	June 1989	0.003	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
	July 1989	0.012	
IWW LaGrange Pool	May 1996	0.0551	Gutreuter et al. 1998b
	June 1996	0.0301	
	June 1997	0.00093	
	July 1996	0.0040	
	July 1997	0.0020	
IWW LaGrange Pool	June 1978	<0.01	Wapora, Inc. 1981
	July 1978	<0.01	

**Table B15**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
 for Bluegill/*Lepomis* spp. (cont.)**

Location	Date	Density (No./m <sup>3</sup> )	Reference
	August 1978	<0.01	
	May 1979	<0.01	
	June 1979	0.01	
	July 1979	<0.01	
	August 1979	<0.01	
	May 1980	<0.01	
	June 1980	0.02	
	July 1980	0.02	
	August 1980	<0.01	

**Table B16**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Black Crappie/White Crappie/*Pomoxis* spp.**

Location	Date	Density (No./m <sup>3</sup> )	Reference
Upper St. Anthony/Lower St. Anthony (up from UMR Pool 1)	May 1975	0.1212	Minnesota Power and Light 1977
	June 1975	0.0115	
UMR Pool 1	May 1980	0.001	Holland et al. 1984, Heberling et al. 1981
	June 1980	0.001	
UMR Pool 2	June 1976	0.0013	HDR 1977a
	July 1976	0.0013	
UMR Pool 3	April-Sept. 1975	0.0012	Dahlberg et al. 1976
UMR Pool 3	June 1978	0.01	Holland et al. 1984, HDR 1979
UMR Pool 4	June 1981	0.02	Holland et al. 1984
UMR Pool 5	1981	0.0007	Kowalski et al. 1984
	1982	0.009	
UMR Pool 7	May 1981	0.088	Holland et al. 1984, Holland & Sylvester 1983
	June 1981	0.004	
UMR Pool 8	May 1982	0.06	Holland et al. 1984, Holland et al. 1983
	June 1982	0.04	
UMR Pool 8	June-Aug. 1989	0.001	Holland-Bartels et al. 1990a
UMR Pool 8	June 1989	0.001	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
	July 1989	0.002	
UMR Pool 13	April-Aug. 1983	0.011	Sheaffer & Nickum 1986
UMR Pool 13	June-Aug. 1989	0.001	Holland-Bartels et al. 1990a
UMR Pool 13	June 1989	0.003	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
UMR Pool 14	May 1975	0.06	Holland et al. 1984, Nalco 1976
	June 1975	0.069	
UMR Pool 14	April 1976	0.001	Holland et al. 1984, Nalco 1977
	May 1976	0.037	
	June 1976	0.009	
UMR Pool 14	April 1977	0.116	Holland et al. 1984, Hazleton 1978
	May 1977	0.027	
	June 1977	0.008	

**Table B16**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
 for Black Crappie/White Crappie/*Pomoxis* spp. (cont.)**

Location	Date	Density (No./m <sup>3</sup> )	Reference
UMR Pool 14	May 1978	0.008	Holland et al. 1984, Hazleton 1978
	June 1978	0.013	
UMR Pool 14	May 1978	0.05	Hazleton 1979
	June 1978	0.08	
UMR Pool 14	May 1979	0.53	Commonwealth Edison 1980
	June 1979	0.24	
UMR Pool 14	May 1980	0.006	ERT 1981
	June 1980	0.027	
UMR Pool 14	June 1981	0.02	ERT 1982, Holland et al. 1984
UMR Pool 14	May 1983	0.012	ERT 1984
	June 1983	0.032	
UMR Pool 14	May 1984	0.178	LMSE 1985
	June 1984	0.050	
	July 1984	0.027	
UMR Pool 14	April 1985	0.01	LMSE 1986
	May 1985	0.16	
UMR Pool 26	June-Aug. 1989	0.001	Holland-Bartels et al. 1990a
UMR Pool 26	June 1989	0.002	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
IWW LaGrange Pool	June-Aug. 1989	0.014	Holland-Bartels et al. 1990a
IWW LaGrange Pool	June 1989	0.042	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
IWW LaGrange Pool	June 1978	<0.01	Wapora, Inc. 1981
	May 1979	<0.01	
	June 1979	<0.01	
	July 1979	<0.01	
	August 1979	<0.01	
	May 1980	<0.01	
	June 1980	<0.01	
	July 1980	<0.01	

**Table B17**
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Smallmouth Bass and Largemouth Bass/Centrarchidae**

<b>Location</b>	<b>Date</b>	<b>Density (No./m<sup>3</sup>)</b>	<b>Reference</b>
<b>Smallmouth Bass</b>			
UMR Pool 1	May 1980	0.003	Holland et al. 1984, Heberling et al. 1981
	June 1980	0.004	
IWW LaGrange Pool	June 1979	<0.01	Wapora, Inc. 1981
<b>Largemouth Bass</b>			
UMR Pool 1	June 1980	0.001	Holland et al. 1984, Heberling et al. 1981
<b><i>Micropterus</i> spp.</b>			
IWW LaGrange Pool	May 1979	<0.01	Wapora, Inc. 1981
	June 1979	<0.01	
<b>Centrarchidae</b>			
UMR Pool 2	July 1976	0.0005	HDR 1977a
UMR Pool 5	1981	0.0002	Kowalski et al. 1984
UMR Pool 14	May 1978	0.03	Hazleton 1979
UMR Pool 14	June 1978	0.11	Hazleton 1979

**Table B18**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Walleye/Sauger/*Stizostedion* spp.**

Location	Species	Date	Density (No./m <sup>3</sup> )	Reference
Upper St. Anthony/Lower St. Anthony (up from UMR Pool 1)	Walleye	May 1975	0.06123	Minnesota Power and Light 1977
		June 1975	0.2128	
UMR Pool 1	Walleye	May 1980	0.001	Holland et al. 1984, Heberling et al. 1981
UMR Pool 2	<i>Stizostedion</i> spp.	April 1976	0.031	HDR 1977a
		May 1976	0.0029	
UMR Pool 3	Sauger	April-Sept. 1975	0.0055	Dahlberg et al. 1976
	Walleye	April-Sept. 1975	0.0009	
UMR Pool 7	<i>Stizostedion</i> spp.	May 1981	0.004	Holland et al. 1984, Holland & Sylvester 1983
UMR Pool 13	<i>Stizostedion</i> spp.	April-Aug. 1983	0.004	Sheaffer & Nickum 1986
UMR Pool 13, Sand Prairie Site, RM 545.5	<i>Stizostedion</i> spp.	1994	0.0003	Iowa Department of Natural Resources 1997
		1995	0.0015	
		1996	0.0015	
		1997	0.0021	
UMR Pool 13, Pleasant Creek Site, RM 553.4	<i>Stizostedion</i> spp.	1994	0.001	Iowa Department of Natural Resources 1997
		1995	0.0014	
		1996	0.0048	
		1997	0.0021	
UMR Pool 14	<i>Stizostedion</i> spp.	May 1975	0.007	Holland et al. 1984, Nalco 1976
		June 1975	0.001	
	Sauger	May 1975	0.002	
	Walleye	May 1975	0.002	
UMR Pool 14	<i>Stizostedion</i> spp.	April 1976	0.004	Holland et al. 1984, Nalco 1977
		May 1976	0.007	

**Table B18**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
 for Walleye/Sauger/*Stizostedion* spp. (cont.)**

Location	Species	Date	Density (No./m <sup>3</sup> )	Reference
UMR Pool 14	<i>Stizostedion</i> spp.	April 1977	0.211	Holland et al. 1984, Hazleton 1978
		May 1977	0.014	
UMR Pool 14	<i>Stizostedion</i> spp.	May 1978	0.013	Holland et al. 1984, Hazleton 1978
UMR Pool 14	<i>Stizostedion</i> spp.	April 1981	0.017	Holland et al. 1984, ERT 1982
		May 1981	0.013	
UMR Pool 14	<i>Stizostedion</i> spp.	May 1978	0.05	Hazleton 1979
	<i>Stizostedion</i> spp.	June 1978	0.001	
UMR Pool 14	<i>Stizostedion</i> spp.	May 1979	0.07	Commonwealth Edison 1980
UMR Pool 14	<i>Stizostedion</i> spp.	April 1980	0.011	ERT 1981
		May 1980	0.006	
UMR Pool 14	Sauger	May 1983	0.063	ERT 1984
UMR Pool 14	Sauger	April 1984	0.06	LMSE 1985
UMR Pool 14	<i>Stizostedion</i> spp.	April 1984	0.07	LMSE 1985
		May 1984	0.027	
	Sauger	April 1984	0.06	LMSE 1985
		May 1984	0.102	
UMR Pool 14	Sauger	April 1985	0.01	LMSE 1986
UMR Pool 14	<i>Stizostedion</i> spp.	April 1985	0.02	LMSE 1986
UMR Pool 26	Percidae	April 1997	0.0013	Gutreuter et al. 1998b
		May 1997	0.0181	
		May 1996	0.0144	
		June 1997	0.0078	
		June 1996	0.0025	
IWW LaGrange Pool	Percidae	May 1997	0.0058	Gutreuter et al. 1998b
IWW LaGrange Pool	<i>Stizostedion</i> spp.	July 1978	<0.01	Wapora, Inc. 1981
		April 1979	<0.01	
		May 1979	<0.01	
		April 1980	<0.01	
		May 1980	<0.01	

**Table B18**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System for**  
**Walleye/Sauger/*Stizostedion* spp. (cont.)**

Location	Species	Date	Density (No./m <sup>3</sup> )	Reference
IWW LaGrange Pool	Percidae	July 1978	<0.01	Wapora, Inc. 1981
		April 1980	<0.01	
		May 1980	<0.01	

**Table B19**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Freshwater Drum**

Location	Date	Density (No./m <sup>3</sup> )	Reference
UMR Pool 2	May 1976	0.139	HDR 1977a
	June 1976	0.948	
	July 1976	0.0658	
	Aug. 1976	0.0017	
UMR Pool 3	April-Sept. 1975	0.0103	Dahlberg et al. 1976
UMR Pool 5	May 1975	0.02	Holland et al. 1984, Wapora, Inc. 1976a
	June 1975	0.07	
UMR Pool 5	1981	0.02	Kowalski et al. 1984
	1982	0.194	
UMR Pool 7	July 1975	0.01	
	Aug. 1975	0.01	
UMR Pool 7	June 1981	0.26	Holland et al. 1984, Holland & Sylvester 1983
	July 1981	0.02	
UMR Pool 8	May 1982	0.24	Holland et al. 1984, Holland et al. 1983
	June 1982	0.68	
	July 1982	0.82	
UMR Pool 8	June-Aug. 1989	0.902	Holland-Bartels et al. 1990a
UMR Pool 8	June 1989	1.05	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
	July 1989	0.01	
	Aug. 1989	0.001	
UMR Pool 9	June 1980	0.811	Holland-Bartels et al. 1990a
UMR Pool 13	April-Aug. 1983	0.264	Sheaffer & Nickum 1986
UMR Pool 13	June-Aug. 1989	0.463	Holland-Bartels et al. 1990a
UMR Pool 13	June 1989	0.83	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
	July 1989	0.017	
	Aug. 1989	0.003	
UMR Pool 14	May 1975	0.797	Holland et al. 1984, Nalco 1976
	June 1975	1.58	

**Table B19**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
 for Freshwater Drum (cont.)**

Location	Date	Density (No./m <sup>3</sup> )	Reference
	July 1975	0.214	
UMR Pool 14	May 1976	0.087	Holland et al. 1984, Nalco 1977
	June 1976	1.78	
	July 1976	0.07	
	Aug. 1976	0.046	
	Sept. 1976	0.007	
UMR Pool 14	May 1977	0.052	Holland et al. 1984, Hazleton 1978
	June 1977	0.199	
	July 1977	0.42	
	Aug. 1977	0.104	
UMR Pool 14	May 1978	0.158	Holland et al. 1984, Hazleton 1978
	June 1978	1.095	
	July 1978	0.122	
UMR Pool 14	May 1981	0.264	Holland et al. 1984, ERT 1982
	June 1981	4.47	
	July 1981	0.296	
UMR Pool 14	May 1978	0.49	Hazleton 1979
	June 1978	5.81	
	July 1978	0.33	
UMR Pool 14	June 1979	8.92	Commonwealth Edison 1980
	July 1979	2.52	
UMR Pool 14	May 1980	0.28	ERT 1981
	June 1980	1.27	
	July 1980	3.04	
UMR Pool 14	June 1983	21.47	ERT 1984
	July 1983	0.301	
UMR Pool 14	May 1984	0.015	LMSE 1985
	June 1984	36.4	
	July 1984	1.13	
UMR Pool 14	May 1985	2.67	LMSE 1986
	June 1985	2.91	
	July 1985	0.23	
UMR Pool 26	June-Aug. 1989	0.319	Holland-Bartels et al. 1990a

**Table B19**  
**Available Larval Density Data in the Upper Mississippi River-Illinois Waterway System  
for Freshwater Drum (cont.)**

Location	Date	Density (No./m <sup>3</sup> )	Reference
UMR Pool 26	June 1989	1.326	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
	July 1989	0.004	
UMR Pool 26	April 1997	0.0032	Gutreuter et al. 1998b
	May 1996	0.0030	
IWW LaGrange Pool	June 1996	1.424	
	June 1997	1.152	
IWW LaGrange Pool	July 1996	0.9669	
	July 1997	0.0097	
IWW LaGrange Pool	June-Aug. 1989	1.205	Holland-Bartels et al. 1990a
IWW LaGrange Pool	June 1989	3.037	Holland-Bartels et al. 1990a, Holland-Bartels et al. 1995
IWW LaGrange Pool	May 1997	0.2350	Gutreuter et al. 1998b
	May 1996	0.0816	
IWW LaGrange Pool	June 1996	0.1179	
	June 1997	3.866	
IWW LaGrange Pool	July 1996	1.8765	
	June 1978	0.25	Wapora, Inc. 1981
IWW LaGrange Pool	July 1978	<0.01	
	August 1978	<0.03	
IWW LaGrange Pool	May 1979	0.17	
	June 1979	0.77	
IWW LaGrange Pool	July 1979	0.02	
	August 1979	<0.01	
IWW LaGrange Pool	April 1980	<0.01	
	May 1980	0.12	
IWW LaGrange Pool	June 1980	0.80	
	July 1980	0.06	
IWW LaGrange Pool	August 1980	0.01	